

1996 STATUS REPORT FOR THE LACREEK TRUMPETER SWAN FLOCK

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ABSTRACT

A total of 115 Trumpeter Swans (*Cygnus buccinator*), including 23 cygnets, returned to Lacreek National Wildlife Refuge following the 1996 breeding season. This compares to 152 Trumpeters, including 34 cygnets, in 1995, 205 Trumpeters, including 61 cygnets, in 1994, and 164 Trumpeters, including 42 cygnets, in 1993. However, numerous Trumpeter Swans were found wintering on the Snake River in Cherry County, Nebraska, 55 km south of the refuge in December. During the summer aerial production survey, 207 Trumpeter Swans were observed, including 52 nesting pairs, 22 broods with 78 cygnets, and 23 nonbreeders in five flocks, compared to 214 Trumpeters, including 48 nesting pairs, 17 broods with 46 cygnets, and 61 nonbreeders in nine flocks in 1995. Cygnet production increased 73% over 1995, but the number of nonbreeding birds decreased by 62%, leaving the total number of swans about the same. Two pairs of swans nested on the refuge in 1996. One pair was unsuccessful, and the other pair hatched a brood of two cygnets with only one cygnet surviving to fledge. The discovery of a significant wintering population in Cherry County, Nebraska, in December 1996 accounts for the declining population on the refuge, and even though the hopes for a southern winter migration are diminished, these Trumpeters are surviving in the wild. Four of the seven Trumpeter Swans, marked in 1994 near Greenwater Lake Provincial Park, Saskatchewan, and another Trumpeter banded earlier were observed on Lacreek National Wildlife Refuge during November and December 1996 and remained to the end of the year. Another three Trumpeter Swans were shot on the Platte River in Nebraska in 1996. Two were killed, and one was rehabilitated, banded, and released. The perpetrator was caught and fined. A new trapping technique using a modified turkey trap is proving successful.

POPULATION REPORT

A total of 115 Trumpeter Swans (*Cygnus buccinator*), including 23 cygnets, returned to Lacreek National Wildlife Refuge following the 1996 breeding season. This compares to 152 Trumpeters, including 34 cygnets, in 1995, 205 Trumpeters, including 61 cygnets, in 1994, and 164 Trumpeters, including 42 cygnets, in 1993 (Table 1). However, numerous Trumpeter Swans were found wintering on the Snake River in Cherry County, Nebraska, 55 km south of the refuge in December.

A total of 207 Trumpeter Swans was observed during the late summer aerial production survey, including 52 nesting pairs, 22 broods with 78 cygnets, and 23 nonbreeders in five flocks, compared to a total of 214 Trumpeters, including 48 nesting pairs, 17 broods with 46 cygnets, and 61 nonbreeders in nine flocks in 1995 (Table 2). Production increased 73% over 1995, but the number of nonbreeding birds decreased by 62%, leaving the total number of swans about the same.

Table 1. Breeding season peak population and production data for Trumpeter Swans wintering on Lacreek National Wildlife Refuge, 1981-96.

| Breeding Season | Adults | Cygnets | Total |
|-----------------|--------|---------|-------|
| 1996* | 92 | 23 | 115 |
| 1995* | 118 | 34 | 152 |
| 1994 | 144 | 61 | 205 |
| 1993 | 122 | 42 | 164 |
| 1992 | 138 | 62 | 200 |
| 1991 | 105 | 45 | 150 |
| 1990 | 164 | 61 | 225 |
| 1989 | 221 | 61 | 282 |
| 1988 | 169 | 78 | 247 |
| 1987 | 182 | 86 | 268 |
| 1986 | 166 | 63 | 229 |
| 1985 | 144 | 43 | 187 |
| 1984 | 190 | 47 | 237 |
| 1983 | 206 | 57 | 263 |
| 1982 | 167 | 48 | 215 |
| 1981 | 172 | 58 | 230 |

* See Table 1a.

Table 1a. 1996 winter population of Trumpeter Swans in South Dakota and Nebraska.

| Location | Adults | Cygnets | Total |
|--------------|------------|-----------|------------|
| Lacreek NWR | 58 | 7 | 65 |
| Snake River | 105 | 37 | 142 |
| Blue Creek | 2 | 3 | 5 |
| Total | 165 | 47 | 212 |

Fall Trumpeter Swan populations began building on 11 November 1996 with the arrival of 30 Trumpeter Swans when approximately 70% of refuge waters and most off-refuge wetlands froze over with the onset of cold weather. Cold weather (0 to 5 °C during the day, -6 to -12 °C during the night) persisted for the next 10 days and the increasing swan population peaked at 115 birds (92 adults with 23 cygnets in 10 broods) on 19 November 1996. A warm spell (0 to 8 °C) during late November - early December opened some frozen wetlands, allowing Trumpeters on the refuge to disperse. From 20 December through the end of the year, the remaining swan population stabilized at about 73 birds. In late December, a ranch hand reported 15 swans along the Snake River on the Miner Ranch in Cherry County, Nebraska. An aerial survey on 30 December revealed 142 Trumpeter Swans, including 37 cygnets in 14 broods, along 30 km of the Snake River east and west of Highway 61. The waterfowl survey on the refuge on 31 December 1996 revealed 65 swans, including seven cygnets in three broods, bringing the December wintering peak for the High Plains flock to 212 swans, including 47 cygnets in 17 broods (Table 1a). The total population for the 1996 High Plains wintering flock (Lacreek NWR/ Snake River) is comparable to the Lacreek peak population figures for 1994 and 1992 and offers a reasonable explanation for the declines in 1993, 1995, and 1996 on the refuge (Table 1). The total wintering population is now comparable to the summer breeding population, except for losses in cygnets and an increase in adults, leaving some doubt as to the extent of a winter migration. Some winter migration is probably still occurring because the winter population used to be significantly larger than the summer population. All this is still speculation at this point as the study continues.

Table 2. Breeding performance of Nebraska and South Dakota Trumpeter Swans, 1981-96.

| Year | # Adults | # Pairs | # Broods | # Cygnets | Total |
|-------|----------|---------|----------|-----------|-------|
| 1996 | 129 | 52 | 22 | 78 | 207 |
| 1995 | 168 | 48 | 17 | 46 | 214 |
| 1994 | 164 | 54 | 32 | 85 | 249 |
| 1993 | 115 | 42 | 21 | 58 | 173 |
| 1992 | 126 | 48 | 30 | 102 | 228 |
| 1991 | 117 | 44 | 24 | 89 | 206 |
| 1990 | 127 | 41 | 22 | 68 | 195 |
| 1989 | 152 | 51 | 30 | 79 | 231 |
| 1988* | - | - | - | - | - |
| 1987 | 110 | 34 | 23 | 81 | 191 |
| 1986 | 103 | 41 | 21 | 74 | 177 |
| 1985 | 95 | 40 | 22 | 63 | 158 |
| 1984 | 116 | 42 | 28 | 65 | 181 |
| 1983* | - | - | - | - | - |
| 1982* | - | - | - | - | - |
| 1981 | 104 | 30 | 16 | 54 | 158 |

* No data

Two Trumpeters were shot and killed and another was wounded on the Platte River near Oglala, Nebraska, in 1996. The perpetrators were observed by Nebraska Conservation Officer Dennis Thompson and were caught and fined. The wounded swan was caught and turned over to the Nebraska Wildlife Rescue Team, Inc. in Omaha for rehabilitation. The wounded bird was only wing-tipped and has fully recovered. The bird was banded and collared (R03, Green) and released 18 January 1997 on Blue Creek, north of Oshkosh, in Garden County, Nebraska.

PRODUCTION REPORT

The 1996 aerial production survey was conducted 3-5 September 1996. The survey included Bennett, Shannon, Pennington, Meade, Butte, Perkins, Ziebach, Haakon, Jackson, Mellette, and Todd Counties in South Dakota, Cherry, Sheridan, Garden, Grant, McPherson, and Arthur Counties in Nebraska, and Crook County in Wyoming. No swans were observed in Pennington, Haakon, or Mellette Counties in South Dakota, or in Crook County, Wyoming, this year. However, the swans normally associated with the Colony, Wyoming, site were seen just across the state line in Butte County, South Dakota. A total of 207 Trumpeter Swans was

observed, including 52 nesting pairs, 22 broods with 78 cygnets, and 23 nonbreeders in five flocks. Even though the number of cygnets for 1996 is down from the all-time high of 102 in 1992, the 1996 cygnet numbers are comparable with production for the last 11 years. The total number of adults for 1996 is down from 1994 and 1995, but the number of breeding pairs, broods, and cygnets produced in 1996 remain stable (Table 2).

REFUGE PRODUCTION

Swan 54FA and her mate nested on Pool 8 in 1995 and hatched six cygnets but fledged only two. 54FA was banded AHY in 1991 and probably started nesting in 1993. The other two nesting pairs on Pool 7 each hatched four cygnets but lost all of them. The losses are considered to be due to the adults' inexperience. The pair on Pool 9 set up a territory but did not hatch any cygnets. In 1996, only two pairs set up nesting territories, one in Pool 9 and one in Pool 7. The pair on Pool 9 was unsuccessful. The pair on Pool 7 hatched two cygnets but only brought one to flight (Table 3). The number of nesting pairs and the number of cygnets to flight have declined on the refuge in recent years. The declines are assumed to be the result of many factors, including changes in population dynamics (more birds wintering off the refuge), natural mortality of the older more experienced nesting pairs on the refuge and their replacement by younger less experienced nesters, and recent management activities that resulted in some disturbance.

MIGRATION ATTEMPTS

Migration attempts have been suspected during the past few years due to a recent decline in wintering swans at Lacreek combined with increasing numbers of adult swans on the summer breeding grounds. However, the Trumpeter Swan breeding population appears to have stabilized at just over 200 during the last 2 years (Table 2), and even though the Lacreek wintering population continues to decline, a wintering population of over 140 swans was discovered in December 1996 along the Snake River in Cherry County, Nebraska (Table 1a). The Snake River population and the refuge population were counted on 30 and 31 December 1996, respectively, and their combined numbers account for the summer breeding population. Undoubtedly, there are some Trumpeters that are not seen during the summer aerial survey, and since a number of unmarked Trumpeter Swans are observed on the southern plains every year during the winter, some migration is probably taking place.

Evidence of some winter migration is the report of 13 unmarked Trumpeter Swans at Fort Cobb State Park in Caddo County, southwest of Oklahoma City, Oklahoma, on 3 December 1994. The report indicated four white adults and nine "gray" swans. With the Snake River discovery, hopes for a more southern winter migration may be diminishing, but one must remember that the objective of migration is a self-sustaining population. If the High Plains flock can sustain itself over winter on the Snake River in Nebraska, the objective is being met.

Table 3. Production data for Trumpeter Swans on Lacreek NWR, 1983-96.

| Year | Nesting Pairs | Broods | Hatched | Fledged |
|------|---------------|--------|---------|---------|
| 1996 | 2 | 1 | 2 | 1 |
| 1995 | 4 | 3 | 14 | 2 |
| 1994 | 3 | 3 | 13 | 2 |
| 1993 | 4 | 2 | 7 | 4 |
| 1992 | 5 | 3 | 11 | 5 |
| 1991 | 6 | 6 | 21 | 6 |
| 1990 | 5 | 4 | 18 | 8 |
| 1989 | 6 | 6 | 16 | 7 |
| 1988 | 6 | 5 | 15 | 8 |
| 1987 | 6 | 5 | 13 | 11 |
| 1986 | 6 | 6 | 19 | 19 |
| 1985 | 6 | 5 | 18 | 13 |
| 1984 | 5 | 5 | 15 | 7 |
| 1983 | 5 | 4 | 17 | 9 |

Four out of the seven Trumpeter Swans (collars A00-A07) marked by Rhys Beaulieu (SERM) and Gerry Beyersbergen (Canadian Wildlife Service) in 1994 near Greenwater Lake Provincial Park, Saskatchewan, as well as a fifth Trumpeter Swan (collar 30AC) banded earlier, were observed on Lacreek National Wildlife Refuge during November and December 1996 and remained to the end of the year. Trumpeter Swans A03 and A04 have remained paired since they were first observed at Lacreek in 1994, A07 returned with an unmarked mate and one cygnet in the fall of 1996, and 30AC also returned again with an unmarked mate. None of the Wyoming banded birds (01R-05RC) have been seen since January 1993.

BANDING AND MARKING

Summer banding and marking continues in late June and early July when the subadults are flightless. Seven Trumpeter Swans were banded and collared in South Dakota in 1995 (85FA-91FA). Another seven Trumpeters were banded and collared in 1996, three in South Dakota (92FA-94FA) and four in Nebraska (yellow 98RA-99RA and green R00-R01).

Banding and collaring of subadults and adults will continue in the vicinity of the refuge to provide an increasing pool of marked birds in the environment to aid in observations. Banding at remote sites, more than 20 miles or so from the refuge, is becoming cost prohibitive in this era of down-sizing. Though many Trumpeter Swans are seen during the aerial surveys, the remote locations and the difficulty of determining land ownership and access is very time-consuming. Also, physical access is difficult as most of the wetlands used by nesting swans require off-road, cross-country travel. A second four-wheel-drive vehicle is required as the four-wheel-drive vehicle pulling the boat trailer is always at risk of getting stuck while trying to get the boat to the water. Many of the wetlands are not accessible to the airboat due to moist soil margins, shallow water, and dense cattails.

In an effort to mark more birds in less time, a turkey trap was employed on the refuge adjacent to the winter artificial feeding site in January 1994. The turkey trap, borrowed from South Dakota Game, Fish, and Parks, is a large circular structure with the appearance of a circus tent without sides. It is made of 2-inch mesh netting suspended by ropes between a center pole and poles around the perimeter. The netting is attached to the center pole with a steel ring that can slide down the center pole. This steel ring is tied to the center pole with a rope, and a blasting cap

is placed into the rope. The trap is baited with grain, and, when enough birds are under the net, an electrical charge detonates the cap, breaking the rope, and the net collapses to capture the birds.

Although the trapping was successful, with 17 Trumpeters caught and banded, the trap was inappropriate for use with swans and geese because the 2-inch mesh was too large, allowing wings and necks to go through the mesh with horrendous entanglement problems. The concept proved acceptable, though, and a new net was constructed using 1-inch netting.

The new net was set up in January 1997 and tried on 21 January 1997. The 1-inch netting proved satisfactory, and 35 Trumpeter Swans were caught. Of the 35 caught, seven escaped under the edge, four were previously marked, and 24 birds were marked and banded (yellow 95FA-99FA and green S01-S20).

Birds escaping under the edge is a problem. Apparently, when several birds stand up together as a group, they lift the netting, and if they walk together towards the edge, the netting slides over their heads until they escape. A lip on the bottom of the netting that they will step on while walking may solve this problem. Overall, this appears to be a good trapping method that is much safer than cannon or rocket nets used for ducks, which can decapitate long-necked birds.

CONCLUSION

The High Plains flock of Trumpeter Swans is becoming self-sufficient by the use of natural wintering sites, and, even though the population is currently stable, the potential for future growth is evident in the production figures once stable wintering sites are established.